

‘448.” These rejections are defective because Simpson, Merchant ‘870, Letavic and Merchant ‘448, taken alone or in combination, fail to teach or suggest each and every feature of the present invention as required by 35 U.S.C. §103. Further, the Examiner has failed to establish a *prima facie* case of obviousness in support of the rejection under 35 U.S.C. §103(a).

Claim 1 sets forth “a silicon layer formed over the buried oxide layer, wherein an origin of a doping profile of the silicon layer is within a body region of the device and has a dopant level of approximately zero.”

None of the references cited by the Examiner teach or suggest such a doping profile. Simpson, for example, as shown in FIGS. 1 and 2, discloses a doping profile having an origin (i.e., X0) that is located within the lateral drift region 32, not within the body region 30 as claimed. Merchant ‘870 discloses a doping profile  $n(x)$  (see, e.g., FIG. 2 and col. 3, lines 1-11) that is located within the linear lateral doping region 4 and not within the body region 9 as claimed. Letavic discloses a linear lateral doping profile (see, e.g., col. 3, lines 34-41) that is located within the lateral drift region 110. Letavic does not disclose that the linear lateral doping profile extends beyond the lateral drift region 110 (e.g., into a “body region”) as claimed. Finally, Merchant ‘448 discloses a linear doping region 5 that has a linear doping profile as depicted in FIG. 4E. In particular, FIG. 4E clearly teaches that the origin of the doping profile is located within the linear doping region 5, not within the body 9 as claimed. Accordingly, Applicants submit that claim 1 is allowable.

Claims 2-7 depend from independent claim 1 and are, therefore, patentable for at least the reasons set forth above.

Claim 8 sets forth a semiconductor device having "a top oxide layer formed over the silicon layer, wherein a doping profile of the silicon layer has an origin that has a dopant level of approximately zero, and wherein the origin is within the body region, approximately 2 to 4 $\mu$ m from an edge of the top oxide layer." As discussed above, none of the references teach or suggest a doping profile having an origin located within a body region. Further, none of the references teach or suggest a doping profile having an origin located within a body region, wherein the origin is located "approximately 2 to 4 $\mu$ m from an edge of the top oxide layer." Accordingly, Applicants submit that claim 8 is allowable.


Claims 9-13 depend from independent claim 8 and are, therefore, patentable for at least the reasons set forth above.

Accordingly, Applicants respectively submit that claims 1-13 are in condition for allowance.

If the Examiner believes that anything further is necessary to place the application in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

Dated: 11/25/02

  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Letavic et al.	)	Examiner: Ngo, N.
	)	
Application No.: 10/015,640	)	Art Unit: 2814
	)	
Filed: 12/10/2001	)	
	)	
For: HIGH FREQUENCY HIGH VOLTAGE	)	
SILICON-ON-INSULATOR DEVICE WITH	)	
MASK VARIABLE INVERSION CHANNEL	)	
AND METHOD FOR FORMING THE SAME	)	

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Commissioner for Patents  
Washington D.C. 20231

**SEPARATE MARKUP SHEET**

**In the Claims**

Please amend claims 1 and 8 as follows:

1. (Amended) A high frequency semiconductor device having a shifted doping profile, comprising:

a buried oxide layer formed over a semiconductor substrate; and

a silicon layer formed over the buried oxide layer, wherein an origin of a doping profile of the silicon layer is within a body region of the device and has a dopant level of approximately zero.

8. (Amended) A high frequency semiconductor device having a shifted doping profile, comprising:

a buried oxide layer formed over a semiconductor substrate;

a silicon layer formed over the buried oxide layer, wherein the silicon layer comprises a source region, a body region, a drift region, and a drain region; and

a top oxide layer formed over the silicon layer, wherein a doping profile of the silicon layer has an origin that has a dopant level of approximately zero, and wherein the origin is within the body region, approximately 2 to 4 $\mu$ m from an edge of the top oxide layer.